

Overview

纲要

SmartGen always devotes itself to research and develop the control of ship power, has developed an advanced power management (PMS) system, engine monitor and extension module, which provide a strong guarantee for the safe navigation of the ship.

SmartGen多年来一直致力于船舶动力控制的研究与开发，先后开发出了先进的功率管理（PMS）系统，发动机监控仪及扩展模块，为船舶的安全航行提供了强有力的保障。

SmartGen Ship Power Control System:

1. Diesel engine control and protection
2. Power management (PMS)
3. Extension modules
4. Sensor
5. Local control panel

SmartGen船舶动力控制系统：

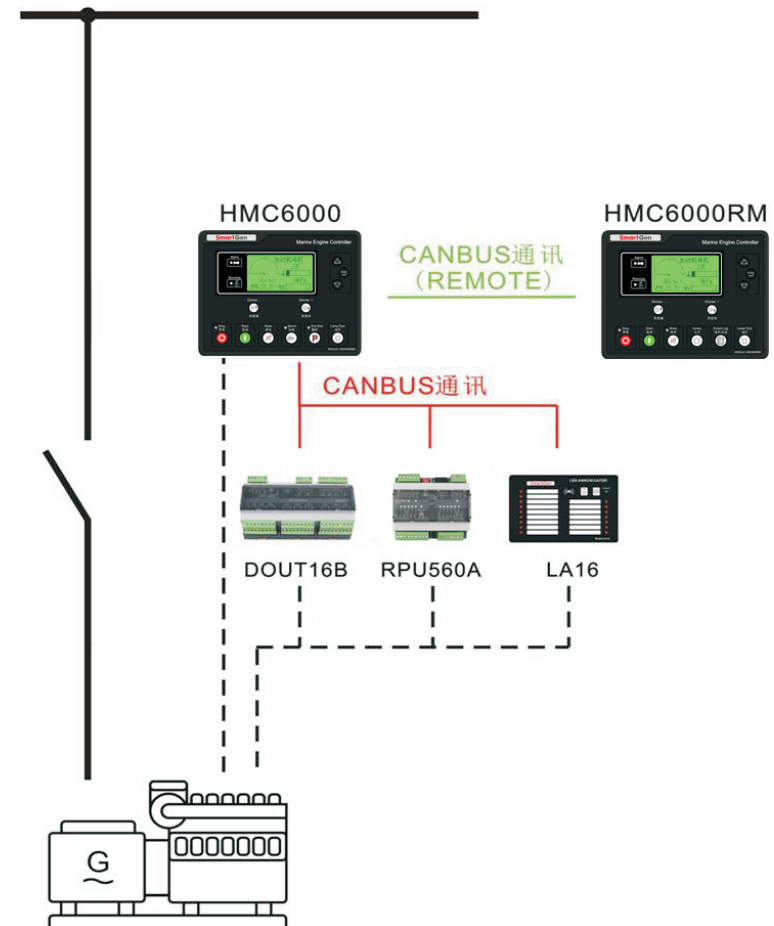
1. 柴油发动机控制保护；
2. 功率管理（PMS）；
3. 扩展模块系列；
4. 传感器；
5. 机旁控制屏；

Application---Ship Power Control

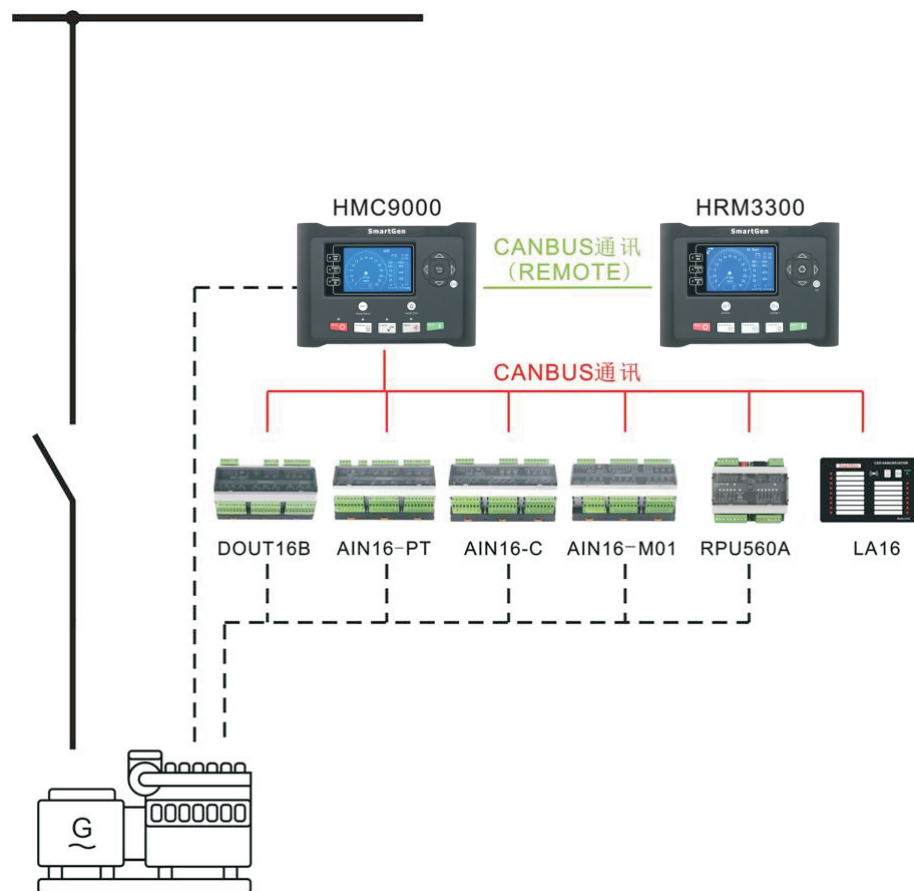
应用方案---船舶动力控制

Master control module HMC6000

主控模块 HMC6000

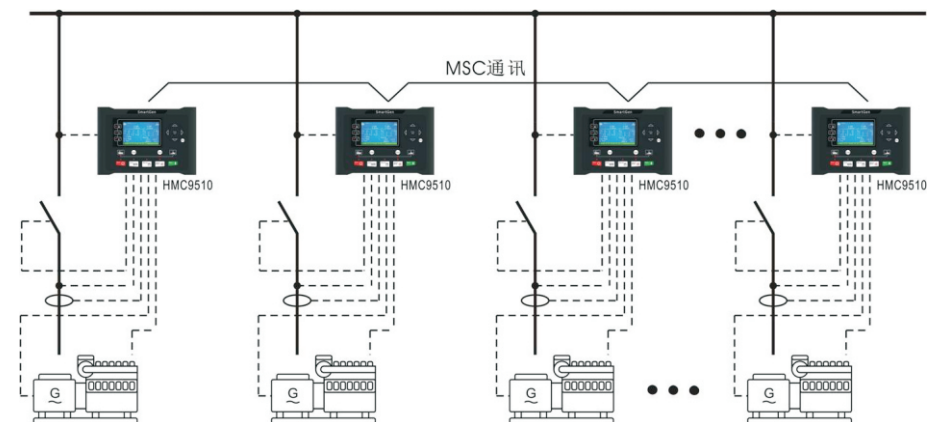


Master control module HMC9000 主控模块 HMC9000

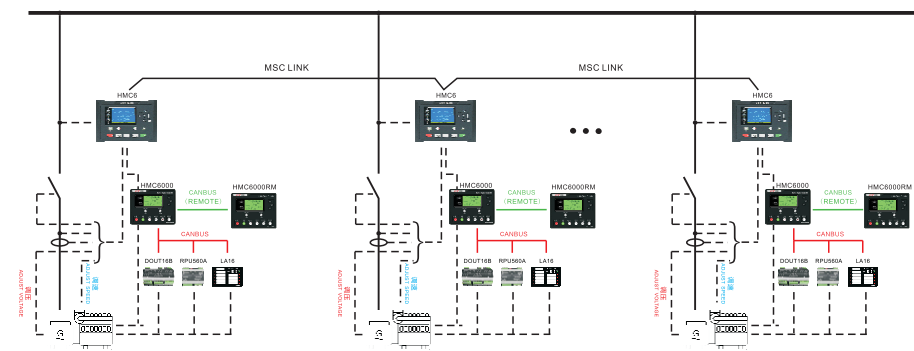


Application---Parallel 应用方案---并联

Parallel module---HMC9510 并联模块 HMC9510

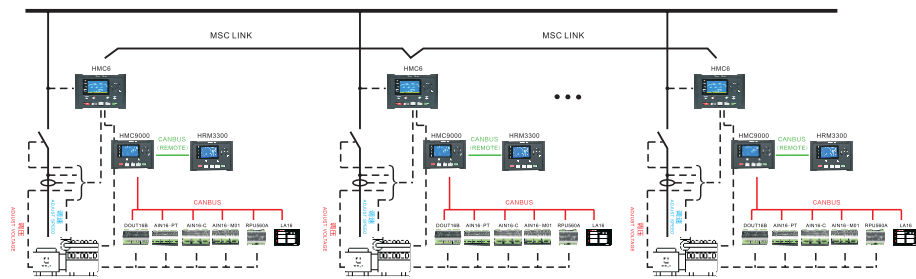


Power Management Module HMC6 + Master Control Module HMC6000 功率管理模块 HMC6 + 主控模块 HMC6000



Power Management Module HMC6 + Master Control Module HMC9000

功率管理模块HMC6 + 主控模块HMC9000

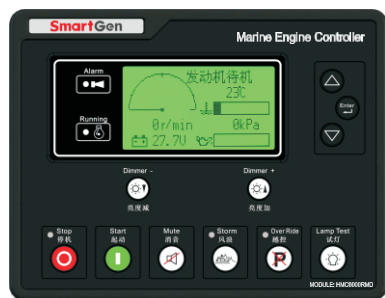


Characteristic---Engine Control

产品特点---发动机控制

Master Control Module HMC6000

主控模块HMC6000



特点:

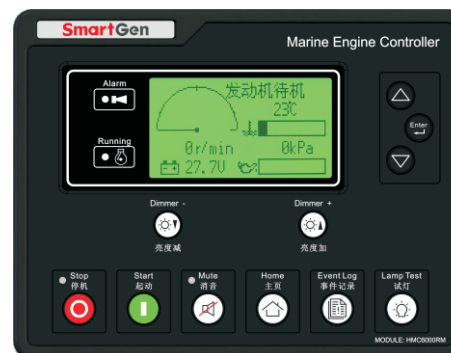
1. 船舶发动机控制与保护
2. CCS认证
3. 具有越控模式
4. 实时时钟 & 历史记录
5. RS485通讯接口
6. 8个继电器输出/9个晶体管输出/11个开关量输入/6个模拟量输入
7. 可与DOUT16A / RPU560A / LA16扩展模块连接
8. 广泛应用于船用应急、主推、主发动机

Characteristics:

1. Ship engine control and protection
2. CCS certification
3. Override function
4. Real-time clock & event log
5. RS485 communication interface
6. 8 relay outputs/9 transistor outputs/11 digital inputs/6 analog inputs
7. Can connect with DOUT16A / PU560A / LA16 extended module
8. Widely used in marine emergency engine, main propulsion engine and main engine

Remote Transmission Module HMC6000RM

远传模块HMC6000RM



Characteristics:

1. Remote monitoring of marine engine
2. CCS certification
3. Can connect with HMC6000

特点:

1. 船用发动机的远程监控
2. CCS认证
3. 可与HMC6000连接

Remote Transmission Module HRM3300

远传模块HRM3300



Characteristics:

1. Remote monitoring
2. CCS certification
3. Apply to HMC9000 series

特点:

1. 远程监控
2. CCS认证
3. 适用于HMC9000系列

Mater Control Module---HMC9000 主控模块HMC9000



Characteristics:

- 1.Engine control and protection
- 2.CCS certification
- 3.J1939 interface
- 4.REMOTE(CANBUS) interface
- 5.Module extension function
- 6.Connect with 16 HRM3300 (remote monitoring module)
- 7.USB programming interface
- 8.RS485 communication interface
- 9.Override function
- 10.18 digital inputs
- 11.8 relay outputs/8 transistor inputs
- 12.8 analog inputs(4 4-20mA and 4 resistive sensors)
- 13.Double-cell monitoring and switching function
- 14.GOV speed adjustment function
- 15.Thread break detection function
- 16.Widely used in marine emergency engine, main propulsion engine and main engine
- 17.PLC(programmable logic control)

特点:

- 1.发动机的控制与保护
- 2.CCS认证
- 3.具有J1939接口
- 4.具有REMOTE(CANBUS)远程监控接口
- 5.具有模块扩展功能
- 6.可挂接16个HRM3300 (远程监控模块)
- 7.USB编程接口
- 8.RS485通信接口
- 9.具有越控模式
- 10.18个开关量输入
- 11.8个继电器输出/8个晶体管输入
- 12.8个模拟量输入 (4路4-20mA和4路电阻型传感)
- 13.具备双电池监测及切换功能
- 14.具有GOV调速功能
- 15.具备断线检测功能
- 16.应用于船用应急、主推、主发
- 17.可逻辑编程 (PLC)

Characteristics---Parallel 产品特点---并联

Parallel Module---HMC9510 并联模块---HMC9510



Characteristics:

- 1.Genset parallel with genset
- 2.CCS certification
- 3.Automatic synchronization and load power share
- 4.control and protection for genset and bus
- 5.GOV and AVR adjustment
- 6.J1939 engine communication
- 7.USB programming interface
- 8.Remote monitoring via Modbus RS485
- 9.PLC(programmable logic control)
- 10.Controlling 32 gensets in parallel automatically in 1 minute

特点:

- 1.机组与机组并联
- 2.CCS认证
- 3.自动同步与负载功率均分
- 4.发电机组和母排控制保护
- 5.GOV和AVR调节
- 6.J1939发动机通讯
- 7.USB编程接口
- 8.通过Modbus RS485实现远程监控
- 9.可逻辑编程 (PLC)
- 10.可控制32台机组1分钟全部自动并联

Power Management Module---HMC6

功率管理模块---HMC6



特点:

1. Power management
2. CCS certification
3. Automatic synchronization and load distribution
4. Remote start/stop function
5. Multipath heavy load request function
6. Multipath unimportant load release function
7. USB programming interface
8. RS485 communication interface
9. CANBUS communication interface
10. GOV automatic speed adjustment function
11. AVR automatic voltage adjustment function
12. Module extension function
13. Event log function
14. PLC(programmable logic control)

Characteristics:

1. 功率管理
2. CCS认证
3. 自动同步和负荷分配
4. 具有遥控开停机功能
5. 具有多路重载问询功能
6. 具有多路非重要负载脱扣功能
7. USB编程接口
8. RS485通讯接口
9. CANBUS通讯接口
10. 具有GOV自动调速功能
11. 具有AVR自动调压功能
12. 具有模块扩展功能
13. 具有历史记录功能
14. 可逻辑编程 (PLC)

Characteristics---Extension Module

产品特点---扩展模块

Security protection module---RPU560A

安保模块---RPU560A



Characteristics:

1. Two working mode selected (security protection main mode and standby mode)
2. Double-cell monitoring and switching function
3. 4 digital fault shutdown inputs
4. 5 relay outputs
5. Emergency stop input port
6. Override mode input
7. 1 speed sensor
8. Π -type 35mm guide-rail installation
9. Can connect with HMC9000 and HMC6000
10. Widely used in marine main propulsion engine, main engine and emergency engine or pump unit

特点:

1. 两种工作模式可选 (安保主用模式和备用模式)
2. 具备双电池监测及切换功能
3. 4路开关量故障停机输入
4. 具备5路继电器输出
5. 具有紧急停机输入端口
6. 具有越控模式输入
7. 一路转速传感器
8. 35mm π 型导轨安装
9. 可与HMC9000和HMC6000连接
10. 适用于船用主推、主发、应急机组或水泵机组

Digital Output Extension Module---DOUT16B

开关量输出扩展模块---DOUT16B



Characteristics:

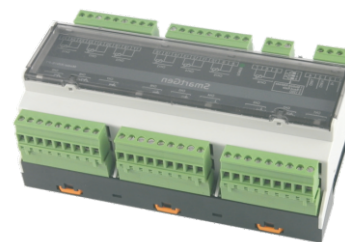
1. 16 volts free relay outputs
2. CCS certification
3. Π -type 35mm guide-rail installation
4. Can connect with HMC9000 and HMC6000

特点:

1. 16路无源继电器输出
2. CCS认证
3. 35mm π 型导轨安装
4. 可与HMC9000和HMC6000连接

PT100 Analog Input Module---AIN16-PT

PT100模拟量输入模块---AIN16-PT



Characteristics:

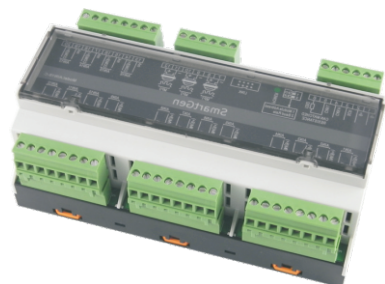
1. 16 PT100 analog inputs
2. CCS certification
3. Π -type 35mm guide-rail installation
4. Can connect with HMC9000

特点:

1. 16路PT100模拟量输入
2. CCS认证
3. 35mm π 型导轨安装
4. 可与HMC9000连接

4-20mA Analog Input---AIN16-C

4-20mA模拟量输入---AIN16-C



Characteristics:

1. 16 4-20mA and 3 speed sample inputs
2. CCS certification
3. Π -type 35mm guide-rail installation
4. Can connect with HMC9000

特点:

1. 16路4-20mA和3路转速采样输入
2. CCS认证
3. 35mm π 型导轨安装
4. 可与HMC9000连接

Synthesis Analog Module---AIN16-M01

模拟量综合模块---AIN16-M01



Characteristics:

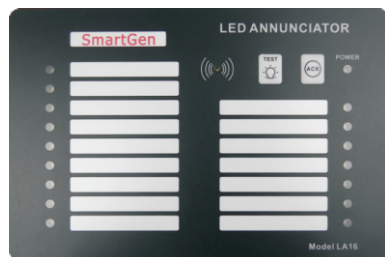
1. Synthesis analog input/output extension module
2. 3 speed inputs/1 4-20mA input/8 PT100 inputs
3. 4 4-20mA outputs
4. CCS certification
5. Π -type 35mm guide-rail installation
6. Can connect with HMC9000

特点:

1. 综合模拟量输入/输出扩展模块
2. 3路转速输入/1路4-20mA输入/8路PT100输入
3. 4路4-20mA输出
4. CCS认证
5. 35mm π 型导轨安装
6. 可与HMC9000连接

LED Extension Module---LA16

LED灯扩展模块---LA16



Characteristics:

1. 16 LED displays
2. CCS certification
3. LINK communication interface
4. Can connect with HMC9000 and HMC6000

特点:

1. 16路LED灯显示
2. CCS认证
3. 具有LINK通讯接口
4. 可与HMC9000和HMC6000连接

Characteristics---Marine Fittings

产品特点---船用配件

Pressure Transmitter---SGPT110

压力变送器---SGPT110



Characteristics:

1. Pressure transmitter
2. Range of pressure test: (0~1)MPa
3. Standard two-wire system output: 4~20mA
4. G 1/4 standard pipe thread
5. Measurement accuracy---level 0.25
6. Level of protection---IP65
7. CCS certification

特点:

1. 压力变送器
2. 测压范围: (0~1)MPa
3. 两线制标准输出: 4~20mA
4. G1/4标准管螺纹
5. 测量精度---0.25级
6. 防护等级---IP65
7. CCS认证

Resistance Temperature Sensor---SGWS115

电阻性温度传感器---SGWS115



Characteristics:

1. PT100 type temperature sensor
2. Three-wire system resistance output
3. G 1/2 standard pipe thread
4. Measurement accuracy---level 0.25
5. Level of protection---IP65
6. CCS certification

特点:

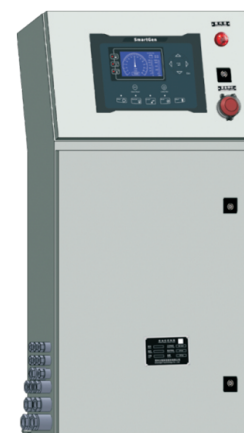
1. PT100型温度传感器
2. 三线制电阻输出
3. G 1/2标准管螺纹
4. 测量精度---0.25级
5. 防护等级---IP65
6. CCS认证

Characteristics---Control Panel

产品特点---控制屏

Vertical Cabinet---MGCP100L

立式柜---MGCP100L



Characteristics:

1. Marine control panel
2. Single diesel generator automation and monitoring
3. With remote monitoring module interface
4. Level of protection---IP44
5. CCS certification

特点:

1. 船用控制屏
2. 单台柴油机自动化控制及监控
3. 具有远程监控模块接口用于远程监控
4. 防护等级---IP44
5. CCS认证

Characteristics---Control Cabinet

产品特点---控制柜

Wall-mounted Cabinet---MGCP100B

壁挂柜---MGCP100B



Characteristics:

1. Marine control panel
2. Single diesel generator automation and monitoring
3. With remote monitoring module interface
4. Level of protection---IP44
5. CCS certification

特点:

1. 船用控制屏
2. 单台柴油机自动化控制及监控
3. 具有远程监控模块接口用于远程监控
4. 防护等级---IP44
5. CCS认证



Application Cases

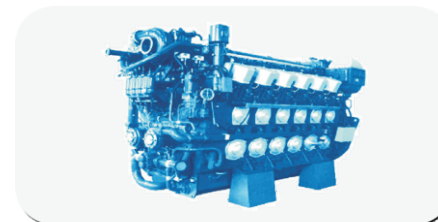
应用案例

MGCP100B



Apply to Cummins emergency genset
康明斯应急发电机组应用

MGCP100B

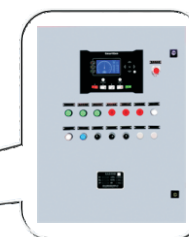
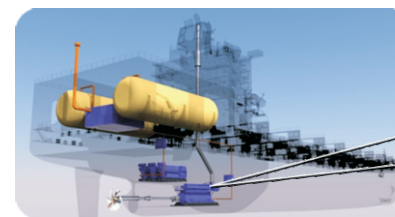


Apply to main propulsion genset in Dalian locomotive company
大连机车主推机组应用

Application---Working Sketches

应用案例---效果图

MGCP100B + HRM3300



Local Control/机旁控制箱



Console/驾控台



远传模块

Remote Transmission Module

CAN BUS
Communication

CAN BUS
通讯